

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-78. (Canceled).

79. (New) A process for cold plastic working of metallic materials which comprises forming on the surface of a metallic material a lubricating coating containing, in an amount of 1 % by mass or more, particles each of which particles consists of a water sparingly soluble or water insoluble polyvalent metal salt of phosphoric acid as a nucleus and a coating of a metallic soap of the polyvalent metal coating the surface of the nucleus, the polyvalent metal being at least one metal selected from Zn, Fe, Mn, Ni, Co, Mg, Ba, Al and Sn, the metallic soap being formed by reaction of the polyvalent metal salt of phosphoric acid with an alkali metal salt, ammonium salt or water soluble ester of a fatty acid, said particles being hereinafter called two-layer particles, or particles each of which consists of each of the two-layer particles and a coating of an alkali metal salt, ammonium salt or water soluble ester of a fatty acid coating the surface of the two-layer particle, said particles being hereinafter called three-layer particles, and subjecting the resulting metallic material to cold plastic working.

80. (New) The process according to claim 79 wherein the particles are two-layer particles, the average particle size of the polyvalent metal salt of phosphoric acid is 300 μm or less and the proportion of all the metallic soap coatings to all the two-layer particles is 1 to 30 % by mass.

81. (New) The process according to claim 79 wherein the polyvalent metal salt of phosphoric acid is zinc phosphate.

82. (New) The process according to claim 79 wherein the particles are three-layer

particles, the average particle size of the polyvalent metal salt of phosphoric acid is 300 μm or less, the proportion of all the metallic soap coatings to all the two-layer particles is 1 to 30 % by mass, and the proportion of all the coatings of the alkali metal salt, ammonium salt or water soluble ester of the fatty acid to all the three-layer particles is 0.1 to 5 % by mass.

83. (New) The process according to claim 79 wherein the formation of the lubricating coating is carried out by making powder consisting of the two-layer particles or the three-layer particles, or a mixture of the powder with at least one additive selected from the group consisting of waxes, solid lubricants, extremely pressure additives, coating forming resins, viscosity adjusting agents, lubricating oils, soaps and metallic soaps, then adhered to the surface of a metallic material.

84. (New) The process according to claim 83 wherein, the additive is at least one additive selected from the group consisting of waxes, coating forming resins, soaps and metallic soaps, and after the powder or the mixture of the powder with the additive which is adhered onto the surface of the metallic material, the resulting metallic material is subjected to light plastic working of the order of skin pass, and then, subjecting the resulting metallic material to cold plastic working.

85. (New) The process according to claim 79 wherein the formation of the lubricating coating is carried out by making a suspension wherein the two-layer particles are suspended in water or an aqueous solution of an alkali metal salt, ammonium salt or water soluble ester of a fatty acid, the average particle size of particles of the polyvalent metal salt of phosphoric acid being 20 μm or less, and the proportion of all the metallic soap coatings to all the two-layer particles being 1 to 30 % by mass, adhering the coating onto the surface of the metallic material, and then, drying the resulting coating.

86. (New) The process according to claim 85 wherein the suspension contains at least one additive selected from the group consisting of waxes, solid lubricants, extremely pressure additives, coating forming resins, viscosity adjusting agents, lubricating oils, soaps and metallic soaps.

87. (New) The process according to claim 79 wherein dry coating thickness of the lubricating coating is 0.5 to 50 μm .

88. (New) A process for cold plastic working of metallic materials which comprises applying onto the surface of a metallic material a lubricating coating forming agent wherein particles each of which consists of a water sparingly soluble or water insoluble polyvalent metal salt of phosphoric acid as a nucleus and a coating of a metallic soap of the polyvalent metal coating the surface of the nucleus, said particles being hereinafter referred to as particles of coated polyvalent metal salt of phosphoric acid, are suspended in an aqueous solution of a water soluble inorganic salt and/or a water soluble organic acid salt; the polyvalent metal being at least one selected from Zn, Fe, Mn, Ni, Co, Mg, Ba, Al and Sn, the metallic soap being formed by reaction of the polyvalent metal salt of phosphoric acid with an alkali metal salt, ammonium salt or water soluble ester of a fatty acid, and each of the water soluble inorganic salt and organic acid salt having a property to form a firm coating when it is uniformly dissolved in water and the resulting solution is applied onto a metallic material and dried;
drying the resulting wet coating to form a lubricating coating; and then,
subjecting the resulting metallic material to cold plastic working.

89. (New) The process according to claim 88 wherein the polyvalent metal salt of phosphoric acid is at least one selected from zinc phosphate, zinc iron phosphate and iron phosphate.

90. (New) The process according to claim 88 wherein the average particle size of the particles of coated polyvalent metal salt of phosphoric acid is 30 μm or less, and the average particle size of the polyvalent metal salt of phosphoric acid is 20 μm or less.

91. (New) The process according to claim 88 wherein the proportion of all the metallic soap coatings to all the particles of coated polyvalent metal salt of phosphoric acid is 1 to 30 % by mass.

92. (New) The process according to claim 88 wherein the water soluble inorganic salt is at least one selected from an alkali metal salt of sulfuric acid, an alkali metal salt of silicic acid and an alkali metal salt of boric acid.

93. (New) The process according to claim 88 wherein the water soluble organic acid salt is at least one selected from an alkali metal salt of malic acid, an alkali metal salt of succinic acid, an alkali metal salt of citric acid and an alkali metal salt of tartaric acid.

94. (New) The process according to claim 88 wherein the proportion by mass of the total of the water soluble inorganic salt and the water soluble organic acid salt (B) to the particles of coated polyvalent metal salt of phosphoric acid (A), namely $(B)/(A)$, in terms of solid matter, is within the range of 0.01 to 20.0.

95. (New) The process according to claim 88 wherein the lubricating coating forming agent contains a smectite clay mineral in such an amount that the proportion by mass of the smectite clay mineral (C) to the particles of coated polyvalent metal salt of phosphoric acid (A), namely $(C)/(A)$, in terms of solid matter, is within the range of 0.005 to 0.5.

96. (New) The process according to claim 88 wherein the lubricating coating forming agent contains, as an auxiliary lubricating ingredient, at least one auxiliary lubricating ingredient (D) selected from an oil, a soap, a metallic soap, a wax and polytetrafluoroethylene in such an

amount that the proportion by mass of the auxiliary lubricating ingredient (D) to the particles of coated polyvalent metal salt of phosphoric acid (A), namely (D)/(A), in terms of solid matter, is within the range of 0.03 to 18.0.

97. (New) The process according to claim 88 wherein the lubricating coating forming agent contains a water soluble or water dispersible organic macromolecular compound having a weight average molecular weight of 1,000 to 1,000,000 in such an amount that its content in the resulting coating gets to be within 0.5 to 25 % by mass based on the whole dry coating.